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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/843,765	04/30/2001	Akihiro Sanda	Q63763	9192

7590

07/08/2003

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EXAMINER

DRUAN, THOMAS J

ART UNIT

PAPER NUMBER

3724

DATE MAILED: 07/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

N.K

Office Action Summary

Application No.

09/843,765

Applicant(s)

SANDA ET AL.

Examiner

Thomas J. Druan, Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 8-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, claims 1-7, in Paper No. 5 is acknowledged.

Drawings

2. Figure 7 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 10, an edge (see page 2, line 25 of the specification). A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

4. The claims are objected to because they include reference characters which are not enclosed within parentheses.

Reference characters corresponding to elements recited in the detailed description of the drawings and used in conjunction with the recitation of the same

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element or group of elements in the claims should be enclosed within parentheses so as to avoid confusion with other numbers or characters which may appear in the claims.

See MPEP § 608.01(m).

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-7 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claims 1-7 reference a cutting edge that is described throughout the specification to be edge 64, though it is not evident that edge 64 performs any cutting whatsoever. Edge 64 is located a distance CT from the severance plane, and does not contact any part of the drum-shaped rotary blade 20. It appears from the drawings that the only place of contact between the drum-shaped rotary blade and disk-shaped rotary blade is between junctions 84 and 86 and it is thought that cutting occurs there. However, since edge 64 is referred to as the cutting edge and implies it is the structure that cuts, it is not known how to make the device to allow for this function.

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7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 2-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. Claim 2 recites the limitations: "the distance CL" in line 2; "the angle $\theta 6$ " in line 5; and "the angle $\theta 1$ " in line 7. There is insufficient antecedent basis for these limitations in the claim.

10. Claim 3 recites the limitation "the angle $\theta 3$ " in line 4. There is insufficient antecedent basis for this limitation in the claim.

11. Claim 4 recites the limitation "the angle $\theta 2$ " in line 4. There is insufficient antecedent basis for this limitation in the claim.

12. Claim 5 recites the limitation "the distance L1" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by US 3,788,180 to Potsch et al. (hereinafter Potsch).

Potsch discloses the invention as claimed including a slitter blade assembly for cutting a workpiece comprising: a drum-shaped rotary blade 53; and a disk-shaped rotary blade 68; said disk-shaped rotary blade having a cutting edge, a first beveled surface facing said drum-shaped rotary blade and progressively spaced from said drum-shaped rotary blade toward said cutting edge, and a second beveled surface facing the workpiece and progressively spaced from said cutting edge away from the workpiece (Fig. 9).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potsch in view of US 5,423,240 to DeTorre in further view of US 5,365,821 to Munier et al. (hereinafter Munier).

Potsch discloses the invention substantially as claimed, but lacks a distance of said first beveled surface up to said cutting edge along a severance plane perpendicular to a surface of the workpiece is set to a value which ranges from 40 μm to 200 μm , an angle of said first beveled surface from said severance plane set to a value which ranges from 0.8° to 14°, an angle of said second beveled surface from said severance plane set to a value which ranges from 65° to 85°, and a second clearance surface

contiguous to said second beveled surface, with the angle of said second clearance surface from said severance plane set to a value which ranges from 20° to 45°

DeTorre teaches providing a rotary blade 12 with a cutting edge 17 having an angle β of a first beveled surface from a severance plane set to a value which ranges from 0.25° to 1° (column 3, line 35 & fig. 2), a first clearance surface contiguous to said first beveled surface, and an angle α of said first clearance surface from said severance plane is set to a value which ranges from 1° to 3° (column 3, lines 34-35 & fig. 2).

Munier teaches providing a rotary blade 1 with a cutting edge having an angle β of a second beveled surface from a severance plane set to a value which ranges from 45° to 90° (the complementary angle range of angle β , which ranges from 0° to 45° as described in column 3, lines 39-41), and a second clearance surface contiguous to said second beveled surface, an angle of said second clearance surface from said severance plane set to a value which ranges from 45° to 80° (the complementary angle range of angle γ , which ranges from 10° to 45° as described in column 3, lines 39-44).

Though the knife of figure 1 of Munier is labeled as prior art, column 4, lines 15-29 state that the knife of figure 1 is used in the invention with changes in dimension related only to blade's central hole diameter and knife thickness; therefore, the angular geometries of the cutting edge are left intact.

DeTorre teaches a distance of said first beveled surface up to said cutting edge along a severance plane perpendicular to a surface of the workpiece set to a value of 0.015 inches (as calculated from the overlap of 0.050-0.080 inches with the crown being

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at 0.035-0.065 inches, leaving 0.015 inches from the crown to the edge of the cutting edge). Though 0.015 inches equals 381 μm .

It would have been obvious to one skilled in the art at the time of the invention to utilize the angular dimensions of the cutting edges of DeTorre and Munier in the cutting edge of Potsch in order to provide desired cutting characteristics. It would also have been obvious to one skilled in the art at the time of the invention to provide Potsch with a distance of said first beveled surface up to said cutting edge along a severance plane perpendicular to a surface of the workpiece set to a value which ranges from 40 μm to 200 μm since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art, especially in view of the value disclosed in DeTorre which is on the order of magnitude as the claimed values.

17. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Potsch in view of DeTorre in further view of Munier in further view of US 4,972,750 to Paavola.

Potsch discloses the invention substantially as claimed, but lacks a distance from said severance plane to a junction between said second bevel surface and said second clearance surface set to a value which ranges from 0.2 mm to 0.8 mm.

Paavola teaches a distance 14 from a severance plane to a junction between a second bevel surface and a second clearance surface set to a value which ranges from 0.1 mm to 1.0 mm (column 2, lines 30-33). It would have been obvious to one skilled in the art at the time of the invention to provide the cutting edge of Potsch with a distance

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from said severance plane to said junction set to a value which ranges from 0.2 mm to 0.8 mm in order to exhibit the advantageous cutting edge characteristics of Paavola.

18. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Potsch.

Potsch discloses the invention substantially as claimed, but lacks any mention of the cutting edge having irregularities along a circumference of the disk-shaped rotary blade with an irregularity quantity set to a value which ranges from 0.5 μm to 5 μm . It would have been obvious to one skilled in the art at the time of the invention to provide the circumference of the disk-shaped rotary blade of Potsch with an irregularity quantity set to a value which ranges from 0.5 μm to 5 μm since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art, and a rotary blade with an irregularity quantity set to a value which ranges from 0.5 μm to 5 μm would cost less to manufacture than one with an irregularity constant of less than 0.5 μm .

19. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Potsch in view of DeTorre.

Potsch discloses the invention substantially as claimed, but lacks said disk-shaped rotary blade and/or said drum-shaped rotary blade made of a cemented carbide. DeTorre teaches making a rotary blade either partially or wholly out of tungsten carbide (which is a cemented carbide) in order to provide a blade with higher hardness than tool steel (column 1, lines 34-41 and column 4, lines 23-29).

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Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Washburn, Mraz, Barnes et al., Sakai et al., Camp et al., Gundlach et al., Johnson, and Ciani et al. are cited to further show the state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas J. Druan, Jr. whose telephone number is 703-308-4200. The examiner can normally be reached on M-F (8:30-6:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Allan N. Shoap can be reached on 703-308-1082. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9302 for regular communications and 703-872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1148.

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tjd

June 30, 2003



**BOYER ASHLEY
PRIMARY EXAMINER**